BEFORE
THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA

DOCKET NOS. 2019-185-E AND 2019-186-E

INRE:	South Carolina Energy Freedom Act (H.3659) Proceeding to Establish Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Standard Offer, Avoided Cost Methodologies, Form Contract Power Purchase Agreements, Commitment to Sell Forms, and Any Other Terms or Conditions Necessary (Includes Small Power Producers as Defined in 16 United States Code 796, as Amended) - S.C. Code Ann. Section 58-41-20(A)	**PROPOSED ORDER OF THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF**

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I. INTRODUCTION AND STATEMENT OF THE CASE

This matter comes before the Public Service Commission of South Carolina ("the Commission") pursuant to the requirements in the South Carolina Energy Freedom Act ("Act 62").[1] According to Act 62,

> [a]s soon as is practicable after the effective date of this chapter, the commission shall open a docket for the purpose of establishing each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary to implement this section....Within such proceeding the commission shall approve one or more standard form power purchase agreements for use for qualifying small power production facilities not eligible for the standard offer. ... The commission may approve multiple form power purchase agreements to accommodate various generation technologies and other project-specific characteristics....Any decisions by the commission shall be just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA and the Federal Energy Regulatory Commission's implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public....

S.C. Code Ann. § 58-41-20 (2019 S.C. Act 62).

Under Act 62, the Commission is expressly directed to consider and promote South Carolina's policy of encouraging renewable energy and ensuring the promotion of the public interest while ensuring that no costs or expenses incurred by Duke Energy Carolinas, LLC ("DEC") or Duke Energy Progress, LLC ("DEP") (collectively "Companies" or "Duke") in compliance with Act 62 are then borne by the Companyies' general body of South Carolina customers without an affirmative finding, which authorizes such cost shift, made by the Commission.[2]

[1] South Carolina Energy Freedom Ac!, H. 3659, l 23'd Legislative Session (2019).
[2] See S.C. Code Ann.§ 58-41-20(F)(2), S.C. Code Ann.§ 58 41-20(0), and Section 16 of Act 62.

A. Procedural History

On May 23, 2019, the Commission opened Docket No. 2019-176-E to initiate a proceeding pursuant to Act 62 to "establish each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary" as required by newly enacted S.C. Code§ 58-41-20(A). By Order No. 2019-524, the Commission closed Docket No. 2019-176-E. On May 30, 2019 the Commission opened Docket No. 2019-185-E for DEC and 2019-186-E for DEP to establish each utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions required under S.C. Code Ann.§ 58-41-20(A).

Johnson Development Associates, Inc. ("Johnson Development" or "JDA"), the South Carolina Solar Business Alliance, Inc. ("SBA"), Nucor Steel-South Carolina ("Nucor")3, the Southern Alliance for Clean Energy and South Carolina Coastal Conservation League ("SACE/CCL"), Walmart, Inc. ("Walmart"), the South Carolina Energy Users Committee ("SCEUC"), and Ecoplexus, Inc. each filed timely petitions to intervene. The Commission granted all petitions to intervene.[4] Pursuant to S.C. Code Ann.§ 58-4-l0(B), the South Carolina Office of Regulatory Staff ("ORS") is party by statute.

After notice to all parties and any party with a pending motion to intervene, the Commission held an Advisory Committee Meeting[5] to discuss Act 62 and related procedural and

[3] Nucor is a DEP customer only, and intervened only in Docket No. 2019-186-E.

[4] Central Electric Power Cooperative, Inc. filed a petition to intervene on August 12, 2019, but withdrew its petition **before the Commission took action.**

[5] **The Commission Advisory Committee is an ad hoc Committee comprised of persons who regularly appear before, and participate in, regulatory proceedings that take place at the Commission. Meetings of the Advisory Committee are called on an as needed basis by the Chief Clerk of the Commission to discuss suggestions for improvements to the Commission's processes and operations.**

scheduling issues on June 14, 2019. On July 17, 2019, the Commission heard oral arguments regarding procedural scheduling issues in this matter including, among other things, whether to consolidate the issues in Docket Nos. 2019-185-E and 2019-186-E with Docket No. 2019-184-E pertaining to Dominion Energy South Carolina, Inc. On July 17, 2019, in Order No. 2019-524(A), the Commission decided against consolidating the three (3) dockets and established pre-filed testimony deadlines and hearing dates for the individual dockets.

Act 62 authorized the Commission to hire an independent third-party consultant to evaluate avoided cost rates, methodologies, terms, calculations and conditions. *See* S.C. Code Ann. § 58-41-20(1). The Commission initially retained Pegasus Global Holdings, Inc. to serve as its independent expert after a vetting process. However, Pegasus failed to disclose certain conflicts of interest, and the Commission discharged Pegasus on August 7, 2019. *See* Order No. 2019-557. On August 12 and 19, 2019, the Commission held Special Commission Business Meetings to interview prospective independent third-party consultants. The Commission permitted the parties of record to submit proposed written questions concerning the candidates. *See* Order No. 2019-557. By Order No. 2019-585, on August 21, 2019, the Commission permitted parties to submit comments on the interviews of the candidates. The Commission selected John Dalton of Power Advisory, LLC on August 28, 2019, to serve as the independent third-party consultant to advise the Commission on the issues under consideration in the dockets. *See* Order No. 2019-621.

On August 14, 2019, the Companies filed the Direct Testimony of five (5) witnesses, George Brown, David Johnson, Glen Snider, Steven Wheeler, and Nick Wintermantel.[6] SBA, SACE/CCL, JDA, and ORS filed Direct Testimony on September 11, 2019.

[6] Snider Direct Exhibits I and 2 were initially filed by Duke almost completely redacted. In compliance with Commission Order No. 2019-604, Duke revised its confidentiality designations to only redact from public filings that information appropriately designated confidential.

ORS filed the Direct Testimony of witnesses Brian Horii and Robert A. Lawyer. Johnson Development filed Direct Testimony of Rebecca Chilton. The SBA filed the Direct Testimony of Edward Burgess, Hamilton Davis, Steven Levitas and Jon Downey. SACE/CCL filed Direct Testimony of Brendan Kirby and James Wilson.

On September 13, 2019, the Commission issued Order Nos. 2019-104-H[7] and 2019-105-H,[8] which set a due date for the filing of pre-hearing briefs and associated responses for the respective dockets. Commission Order No. 2019-107-H amended the due date for initial pre-hearing briefs in the dockets to September 30, 2019 and for reply briefs to October 8, 2019.

On October 2, 2019, the Companies filed the Rebuttal Testimony of six (6) witnesses, John Samuel Holeman, III, George Brown, David Johnson, Glen Snider, Steven Wheeler, and Nick Wintermantel. On October I 1, 2019, ORS and Intervenors filed Surrebuttal Testimony. ORS filed the Surrebuttal Testimony of Brian Horii, JDA of Rebecca Chilton, SBA of Edward Burgess, Steven Levitas, Jon Downey, and Hamilton Davis, and SACE/CCL of Brendan Kirby and James Wilson.[9] Walmart, Nucor, Ecoplexus, and the SCEUC did not file testimony.

The merits hearing commenced at 9:00 am on Monday October 21, 2019, in the Commission's hearing room located at 101 Executive Center Drive, Suite 100, Columbia, South Carolina, and concluded on Tuesday, October 22, 2019. At the outset of the hearing, SBA withdrew a pending motion *in limine* and Duke a motion to strike. Also, at the outset of the hearing, counsel for Duke introduced a partial settlement agreement ("Agreement") between Duke, Johnson Development, SACE/CCL, and the SBA. (Hr'g Ex. 1; Tr. pp. 5-6.) ORS, Nucor, Walmart,

[7] This Order applies to DEC.
[8] This Order applies to DEP.
[9] SACE/CCL submitted amended Surrebuttal Testimony for Brendan Kirby on October 18, 2019. SBA submitted amended Direct and Surrebuttal Testimony of Ed Burgess on October 17, 2019, along with an explanatory letter on October 18, 2019.

Ecoplexus, and SCEUC did not object to the Agreement. *(See* Hr'g Ex. l; Tr. pp. 5-6.) The Agreement related solely to the solar integration services charge ("SISC") and adopted the charge that Duke proposed of$1.10/MWh for DEC and $2.39/MWh for DEP. (Hr'g Ex. l; Tr. p. 7.) The Agreement also outlined the independent review process for the integration services charge agreed to by the settling parties and took notice that the integration study contemplated by Act 62 will interrelate with the independent review process. *(See* Hr'g Ex. I.)

At the hearing, Duke first presented the panel of Glen Sider and George Brown to provide their direct testimonies. Duke next called the panel of Steve Wheeler and David Johnson to provide their direct and rebuttal testimonies. Duke then called Nick Wintermantel to present his direct testimony. SBA and JDA presented a joint panel of Steven Levitas and Rebecca Chilton to provide their direct testimonies. SBA then presented the panel of Edward Burgess, Hamilton Davis, and Jon Downey. Mr. Burgess and Mr. Davis presented their direct testimony, while Mr. Downey presented his direct and surrebuttal testimonies. SACE/CCL presented the direct and surrebuttal testimony of Brendan Kirby. SACE/CCL then presented the direct testimony of James Wilson. ORS presented the panel of Brian Horii (direct and surrebuttal testimonies) and Robert Lawyer (direct testimony).

Duke again presented the panel of witnesses Brown and Snider, this time for rebuttal testimony. Duke then called John Samuel Holeman, III who presented his rebuttal testimony. SBA presented the panel of Edward Burgess and Hamilton Davis to provide their surrebuttal testimonies. SACE/CCL then presented James Wilson to provide his surrebuttal testimony.

At the close of the hearing and then by follow-up e-mail to Commission Counsel Mr. Stark with copy to all parties, counsel for JDA proposed a time for the intervenors to submit proposed commercially reasonable fixed price power purchase agreements with a duration longer than ten

years and with additional terms, conditions, and/or rate structures for approval by the Commission pursuant to S.C. Code Ann. § 58-41-20(F)(l). *See* Order No. 2019-126-H. The Hearing Officer established a deadline to comment on the proposal of October 28, 2019. Duke submitted a response brief in opposition and ORS a letter of no objection.[10] On October 31, 2019, the Hearing Officer directed that any such proposals should be provided in the party's proposed order. Order No. 2019-128-H.

The Power Advisory independent third-party report was published on the Commission's Docket Management System on November I, 2019. Comments on the Power Advisory report, as well as proposed orders, were due to the Commission by November 8, 2019.

B. Summary of the Positions of the Parties

1. SBA

SBA witness Edward Burgess is the Senior Director at Strategen Consulting. Mr. Burgess testimony addressed Duke's "underlying utility incentive structures" and argued that the Companies have "an inherent incentive to pursue low avoided cost rates" to "limit the deployment of QF resources." Tr. p. 376, II. 8-13. He compared the risks of "traditional utility-owned generation resources" with those of "third-party QF resources" and testified that the risk to Duke's customers of the "key elements" of SBA's proposal would "be relatively small." Tr. p. 376, I. 24 top. 377, I. 13. Mr. Burgess also sponsored SBA's avoided energy cost rates and avoided capacity cost rates, as well as addressed Duke's proposed solar integration services charge. Tr. p. 377, I. 19 to p. 378, I. 6.) Mr. Burgess asserts Duke relies on erroneous assumptions in both its energy

[10] ORS had no objection provided that no new evidence or testimony was filed by parties and that any proposal **submitted to the Commission was based on the evidence currently in the record.**

and capacity valuations that produce an unreasonably low avoided cost rate. Tr. p. 378, 1. 15 top. 379, l. 22.

SBA witness Steven Levitas is a Senior Vice President for Strategic Initiatives with Pine Gate Renewables. Tr. p. 308, 11. 4-9. Mr. Levitas' direct testimony "identified a significant number of terms and conditions in Duke's proposed standard offer PPA and terms and conditions, large QF PPA, and notice of commitment form that contain unreasonable provisions contravening the intent of Act 62 to strike a fair and reasonable balance between the interests of QFs on the one hand, and DEC and DEP and their ratepayers on the other." Tr. p. 311, 11. 4-11. Mr. Levitas' surrebuttal, notes that Duke witnesses Wheeler and Johnson agreed to a number of changes to the Companies' proposed documents to address concerns raised in his direct and in turn "accepted Duke's position on a number of the remaining open issues." Tr. p. 311, 1. 15 top. 312, l. 1.

With respect to unresolved disputes regarding the Standard Offer PPA, Mr. Levitas notes unresolved disagreements relating to whether changes should apply retroactively and Duke's proposed 30-month in-service date. For the Large QF PPA, he notes disagreements over whether a signed facilities study agreement should be a condition of the PPA, the offramp where interconnection facilities and network costs exceed $75,000/megawatt ("MW"), and the use of a surety bonds as performance assurance. Regarding the Notice of Commitment to Sell Form ("NOC"), SBA witness Levitas addressed whether QF's should be required to receive all permits and land use approvals prior to LEO formation, the 365-day in-service requirement from legally enforceable obligations ("LEO") formation, and the offramp for QFs where interconnection facilities and network upgrade costs exceed $75,000/MW.

SBA witness Jon Downey is the CEO of Southern Current, LLC, a member of SBA. Mr. Downey discussed "the steps and investments necessary to bring a solar project to the point of

executing a [PPA]," the risks faced by customers "from third party owned solar assets" compared with "the traditional cost of service utility business model," and the role of Act 62 and PURPA in "enabling effective competition in monopsony energy markets like South Carolina[.]" Tr. p. 395 to 396, I. 9. Mr. Downey also discussed multiple levels at which solar developers compete and the impact that the Commission's decisions in this and related proceedings under Act 62 could have on the solar industry in South Carolina in light of market forces. *See* Tr. p. 397 top. 399.

SBA witness T. Hamilton Davis, IV is the Director of Regulatory Affairs for Southern Current. Tr. 391.2, IL 1-9. Mr. Davis provided an overview of South Carolina Act 62 as it relates to these proceedings, including the Act's goals to promote renewable energy and competition in electricity generation. Tr. p. 387 top. 388. Mr. Davis' testimony discusses the risks and incentives of utilities and solar developers "in both the traditional cost-of-service utility business model, as well as the solar business model enabled by Act 62 and ... PURPA," with an emphasis on the risk posed by the traditional model compared to QF generation and the potential for competition in electricity generation. *See* Tr. 387 top. 389; p. 798 top. 801.

2. JDA

JDA witness Chilton testified regarding "the commercial reasonableness of certain terms of PPAs between the utility and QF" "from a financing party's perspective[.]" Tr. p. 328, II. 13-14. JDA witness Chilton asserted there is "an implicit requirement" in both PURPA and Act 62 "that QFs must be able to access regularly available, market rate financing." Tr. p 328, II. 14-18. The QF's ability to access financing on fair terms depends on "the close interplay of the avoided cost rate[...] and the PPA length." *See* Tr. p. 330, II. 11-12. Witness Chilton asserted that Duke's proposed ten-year term limitation "would dramatically reduce the ability of QFs to access

mainstream capital," and testified that a term "at around 15 years" can provide for QFs to obtain financing on reasonable terms. Tr. p. 349 to p. 350.

3. Duke

Duke witness George Brown is the General Manager of Strategy, Policy and Strategic Investment in Duke Energy's Distributed Energy Technology group. Tr. p. 621.2, IL 6-7. Duke witness Brown's testimony discussed the requirements of PURPA and Act 62, Duke's existing and future financial obligations relating to PURPA QF contracts, and certain consumer protections that Duke recommends the Commission consider in implementing PURPA and Act 62. Tr. pp. 38-40. Mr. Brown also discusses a pending Notice of Proposed Rulemaking ("NOPR") at FERC to provide for, among other things, variable avoided cost rates, and he addresses and asserts arguments related to customer risk. *See* Tr. pp. 618-19.

Duke witness Glen Snider is Duke's Director of Carolinas Integrated Resource Planning and Analytics. Mr. Snider's testimony discussed Duke's use of the "peaker" methodology to calculate avoided costs and provided an overview of the requirements of PURPA and Act 62 as they applied to the Companies' calculations of avoided cost. Tr. pp. 49-50. Mr. Snider explains how Duke calculates avoided energy and avoided capacity costs and explains how these calculations are applied to rate design for Standard Offer QF. Tr. pp. 50-53. Additionally, Duke witness Snider discusses how Duke proposes to apply the peaker methodology to Non-Standard Offer QF's ("Large QF"). Tr. p. 54. Duke witness Snider discusses the Companies' proposed solar integration service charge and introduces the Astrape study undergirding the Companies' proposed SISCs. Tr. p. 55. Duke witness Snider also responds to criticisms offered by the Intervenors relating to the Companies' avoided energy and avoided capacity calculations. *See generally* Tr. pp. 625-29.

Duke witness David Johnson is a Director of Business Development and Compliance. Tr. 271, II. 4-9. He is "responsible for all the PPAs that Duke enters into with third-parties, including negotiation of the PPAs and the ongoing management after they've been executed." Tr. 271, II. 10-13. Duke witness Johnson sponsors the Companies' "PPA for projects 2 megawatts and greater" ("Large QF PPA") and the notice of commitmentto sell form. Tr. 271., II. 20-23.

Duke witness Nick Wintermantel is a consultant with Astrape Consulting. Tr. p. 298, II. 14-15. His testimony supported the solar ancillary service study performed by Astrape for Duke. Tr. 298, II. 23-25. The study determines the amount of load following reserves required to maintain the same reliability when increasing solar penetration and calculates the cost of these additional reserves to develop the Companies' proposed SISC. Tr. pp. 299,301. Duke witness Wintermantel also testifies in support of the Agreement relating to the SISC, which "adopts the results of the Astrape study for the existing plus transition solar penetration level for DEC and DEP." (Tr. 299, II. 17-19.)

Duke witness John Samuel Holeman, III is the Vice President of System Planning and Operations for Duke Energy Corporation. Tr. 754, II. 19-21. Mr. Holeman testimony addresses "challenges and operational circumstances that Duke Energy system operators are going through with growing levels of uncontrolled solar qualifying facilities as they inject energy and power into the DEP, Duke Energy Progress, and DEC, Duke Energy Carolinas, balancing authorities." Tr. 756, II. 9-16.

Duke witness Steven Wheeler is the Pricing and Regulatory Solutions Director for Duke. *See* Tr. p. 260.2, II. 6-10. His testimony "support[s] the [C]ompanies' standard offer tariffs, standard offer PPA, and the standard offer terms and conditions." Tr. 255, I. 23 top. 256, I. 4.) Most of the revisions proposed by Mr. Wheeler have been agreed to among the solar developers

participating in these proceedings and Duke. Outstanding issues include: Duke's proposed revision to the Standard Offer PPA requiring a QF to deliver power within 30 months. Tr. p. 257, I. 25 to p. 258, I. 3. Mr. Wheeler also opposes SBA witness Levitas' proposal "that Duke should link the requirement to deliver power to the in-service date of the interconnection facilities and network upgrades." According to Duke witness Wheeler, the Companies' positions help to avoid stale avoided cost rates. *See* Tr. p. 258, II. 3-7; p. 263, I. 23 top. 264, I. 2.

4. SACE/CCL

SACE/CCL witness Brendan Kirby is a Licensed Professional Engineer with 44 years of experience in the electrical utility sector. Tr. 457, II. 2-10. Mr. Kirby's direct and surrebuttal testimonies "[comments] on Duke Energy's proposed solar integration charge and the ancillary services study, prepared by Astrape Consulting in support of the SISC." Tr. p. 458, II. 7-11. His "testimony critiqued aspects of the ancillary service-study methodology and discussed how certain assumptions and [methodological] choices in the study led to the cost of solar integration being overstated." Tr. 458, II. 11-15. Mr. Kirby testified that "SACE and CCL support the terms of the [Agreement]" as a "reasonable and full resolution of all issues in this proceeding regarding the SISC" and "support an independent technical review of the integration charge methodology as set forth in the stipulation." (Tr. 458, I. 18 top. 459, I. 2.

SACE/CCL witness James Wilson is an economist and independent consultant with 36 years of consulting experience in the electric gas, electric power, and natural gas industry. Tr. 491, **II.**6-15. The focus of his testimony is resource adequacy issues and the 2016 Resource Adequacy ("RA") Studies performed by Astrape and the related capacity value study. Mr. Wilson testified that these Astrape studies "significantly overstate the risk of very high loads under extreme cold," which in turn "undervalues solar resources[.]" Tr. p. 492, I. 17 to p. 493, I. 15. Mr. Wilson

recommends that Duke's seasonal capacity allocation recommendations "be rejected." Tr. p. 493, I. 20. Mr. Wilson recommends that the Companies continue to refine their RA Studies and recommends instituting a stakeholder process to refine the RA Studies. *See* Tr. p. 513, II. 12-25.

5. ORS

ORS witness Brian Horii is a Senior Partner with Energy and Environmental Economics ("E3") with more than 30 years of experience in the energy industry. Tr. p. 525.1, II. 14-19. Mr. Horii testified that Duke's forecast avoided energy costs are reasonable and generally accepts Duke's proposed capacity costs as reasonable. (Tr. p. 523, L 20 top. 524, L 4.) With respect to capacity costs, Mr. Horii disagreed with Duke's proposed 35-year life of a CT, recommending a 20-year life instead to more accurately reflect the cost spread. *See* Tr. p. 524, IL 5-16; p. 526, IL 1-8. Mr. Horii also disagreed with the amount of solar assumed in Duke's analyses related to the seasonal allocation of capacity costs, asserting that the Companies' reliance on estimated future penetration levels would not provide for the most reasonable and accurate avoided cost for contracts that would be signed under the rates set in these dockets. *See* Tr. p. 526, L 9 top. 527, L 2.) Regarding solar integration costs, Mr. Horii did not object to the Agreement. *See* Tr. p. 527, II. 3-6. Finally, ORS witness Horii found the Companies' proposed form PPA to be reasonable, subject to the changes agreed to by Duke witness Wheeler in response to Mr. Horii's direct testimony. *See* Tr. p. 527, IL 7-12.

ORS witness Robert Lawyer's testimony set forth the results of ORS's examination of the Companies' compliance with certain sections of Act 62, including that the Companies' filings included all items required in Section 58-41-20(A). Tr. p. 530, IL 2-14. Mr. Lawyer highlights that customers are ultimately responsible for all avoided cost payments to QF's. Tr. p. 530, II. 22-24.

II. STATUTORY STANDARDS AND REQUIRED FINDINGS

On May 16, 2019, the Governor of South Carolina signed Act 62 into law. Act 62 pertains to a range of issues related to the expansion of renewable energy generation and utility resource planning, and it provides this Commission with both increased direction and discretion m determining the most appropriate path forward for energy development in South Carolina.

Act 62 directs the Commission "to address all renewable energy issues in a fair and balanced manner, considering the costs and benefits to all customers of all programs and tariffs that relate to renewable energy and energy storage, both as part of the utility's power system and as direct investments by customers for their own energy needs and renewable goals." S.C. Code § 58-41-05 (2019 S.C. Act 62). The Commission must also ensure that utilities' rate designs "are just and reasonable and properly reflect changes in the industry as a whole, the benefits of customer renewable energy, energy efficiency, and demand response, as well as any utility or state-specific impacts unique to South Carolina[.]" *Id.* Specifically with respect to avoided cost, new S.C. Code § 58-41-20(A) instructs that "any decisions by the commission shall be just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA and the Federal Energy Regulatory Commission's implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public."

Act 62 provides that any power purchase agreements or other terms and conditions for QFs are commercially reasonable and consistent with PURPA and FERC's implementing regulations and orders. S.C. Code Ann.§ 58-41-20(A), (B)(2).

Additionally, Act 62 requires that

> no costs or expenses incurred nor any payments made by the electric utility in compliance or in accordance with this act must be included in the electrical utility's

> rates or otherwise borne by the general body of South Carolina retail customers of the electrical utility without an affirmative finding supported by the preponderance of evidence of record and conclusion in a written order by the Public Service Commission that such expense, cost or payment was reasonable and prudent and made in the best interest of the electrical utility's general body of customers.

2019 SC Act 62, § 16.

III. REVIEW OF THE EVIDENCE AND FINDINGS OF FACT

A. Avoided Capacity Value

Witness Horii recommended DEC make two (2) changes to the avoided capacity cost calculations: 1) Increase the Fixed Charge Rate for a combustion turbine ("CT"); and 2) Correct the allocation of capacity costs to seasons and time of day.

1. Life of a CT

According to witness Horii, DEC and DEP used a 35-year economic life for the CT, rather than a 20-year economic life, to determine the proper Fixed Charge Rate then used to determine avoided capacity costs. A 20-year life for a CT is commonly used in jurisdictions like California for their electricity avoided costs, PJM for their Cost of New Entry report, and by the highly regarded Lazards Levelized Cost of Energy Analysis report. Tr. p. 525.13, II. 13-17. According to witness Horii, the Companies' use of a 35-year economic life for avoided capacity costs is not appropriate because the Companies failed to include appropriate fixed operating and maintenance ("FOM") costs as part of the total fixed costs for a CT. Tr. 528.2, I. 18 to 528.3, I. I. It is via the inclusion of expensive overhaul work, such as major maintenance, that a CT's life could be extended from twenty (20) to thirty-five (35) years. Tr. p. 528.3, II. 4-5. By using an overly long life in the Fixed Charge Rate calculation DEC and DEP are spreading the capital-related costs of the CT over an excessive number of years and artificially lowering the estimate of costs that would need to be collected in each year for the CT owner. Tr. p. 525.13, I. 17, p. 525.15, I. 1-2.

According to witness Horii, the Companies inappropriately included major maintenance FOM costs associated with the 35-year life of a CT in the modeling of avoided energy costs. Tr. p. 528.3, II. 14-17, p. 528.4, II. 1-4. Witness Horii testified that the Companies improperly minimize (or nearly eliminate) the cost of major maintenance because of the way they calculate avoided energy costs. Tr. p. 528.4, II. 10-11. The Companies model major maintenance costs in PROSYM as an additional start cost for the CT. Tr. p. 528.4, II. 11-12. Witness Horii testified that on its face, this could be viewed as reasonable, however, avoided energy costs are calculated as the difference in operating costs between 1) a base case and 2) a change case that includes 100 MW of free generation. Tr. p. 528.4, II. 12-15. Both the base case and the change case would have substantial major maintenance costs, but almost none of these costs translate to avoided energy costs because they mostly cancel out when calculating the change in costs between the two cases. Tr. p. 528.4, II. 15-18.

Witness Horii's analysis corrected the CT life to twenty (20) years in DEC's and DEP's annualization tool provided by the Companies. Tr. p. 525.14. For DEC, the CT Fixed Charge Rate increases from 7.635% per year to 9.831% per year, which increases the avoided capacity cost by 29%. Tr. p. 525.14, II. 3-5. For DEP, the Fixed Charge Rate increases from 7.189% per year to 9.394% per year, which increases the avoided capacity cost by 30.7%. Tr. p. 525.18, II. 2-4. To further substantiate witness Horii's recommendation, he correctly calculated a 35-year CT avoided capacity cost for DEC and DEP and compared them to his previously calculated 20-year CT avoided capacity costs and the results were nearly identical. Tr. p. 528.6, II. 8-12. According to witness Horii, including the higher costs of major maintenance in the forecast of FOM costs and a 35-year economic life, results in avoided capacity costs that are 1% lower than his

recommendation for DEC and 2% lower than his recommendation for DEP. Tr. p. 528.6, II. 12-15.

Witness Snider testified that he agrees with witness Horii that other jurisdictions and other studies use varying economic life assumptions. Tr. p. 630.51, II. 9-10. However, since consumers in South Carolina pay for both traditional generation and PURPA QF generation, he asserts it is reasonable that the assumption of useable economic life should be the same in either case. Tr. p. 630.51, II. 10-15. Since the 35-year useful life assumption used in the development of capacity rates in this case is consistent with the Company's IRP, Mr. Snider argues it is appropriate to utilize this same assumption for avoided cost purposes. Tr. p. 630.51, II. 16-19.

Witness Snider testified that the FOM cost is included in the calculation of the annual capacity cost and includes labor, office and administration, training, contract labor, safety, building and ground maintenance, communication and laboratory expenses. Tr. p. 630.52, II. 6-9. The variable O&M ("VOM") cost is modeled in PROSYM and includes routine maintenance, makeup water, water treatment, water disposal, and other consumables excluding fuel. Tr. p. 630.52, II. 9-11. In addition, the major maintenance cost assumes third-party maintenance based on the recommended maintenance schedule set forth by the original equipment manufacturer to meet the 35-year useful life of the CT. Tr. p. 630.52, II. 11-14. The major maintenance cost is modeled separately from VOM and is included in PROSYM as a start cost for CTs. Tr. p. 630.52, II. 14-16. Thus, the capital and FOM costs are included in the annual capacity cost in developing the avoided capacity rates paid to QFs, and VOM and major maintenance costs are captured in the PROSYM production cost model and reflected in the avoided energy rates. Tr. p. 630.52, II. 16-19.

Commission Finding

We agree with ORS witness Horii that use of a 20-year useful life for avoided capacity costs is most appropriate. Witnesses Snider and Horii agree major maintenance costs must be included in the calculation of the Companies' avoided costs; however, witness Horii argues the Companies inappropriately account for them. By including major maintenance costs in calculating avoided energy in both the base and change cases, the Companies "essentially make those costs disappear," discounting the impact that major maintenance has on the avoided cost. *See* Tr. p. 528.4, II. 1-9; p. 605, l. 11 top. 606, I. 6. Witness Snider argues thirty-five (35) years should be used because it is consistent with the useful life contained in the Companies' IRPs. Witness Horii does not contest that thirty-five (35) years may be used but asserts that if 35 years is used as the life of the CT, major maintenance must be appropriately included. Furthermore, witness Horii conducted an analysis that included major maintenance in the FOM and the results were nearly identical to those calculated initially using a 20-year useful life of the CT. Duke's analyses, by failing to include the major maintenance FOM in their calculation of avoided capacity costs, underestimate the full fixed cost of a CT. The Commission finds that it is not necessary for the useful life of the CT, when calculating avoided costs, to match the useful life of a CT the Companies assume in their IRPs. Additionally, the Commission finds that the Companies method of including FOM inappropriately discounts the impact of major maintenance on the calculation of avoided costs. Tr. p. 528.3, l. 14 to 528.6, I. 1. As a result, the Commission finds the preponderance of the evidence in the record supports the position put forth by ORS witness Horii as just and reasonable.

2. Seasonal Allocation

Witness Horii also recommended that DEC correct the allocation of capacity costs to seasons and time of day. According to witness Horii, avoided costs should be calculated based on current conditions, but DEC's analysis reflects solar penetration levels too far into the future to reflect actual system capacity needs in 2020. Tr. p. 525.14, II. 6-16.) While DEC correctly allocates the capacity costs based on the relative Loss of Load Expectation ("LOLE") in each time period, DEC incorrectly uses LOLEs based on an expected 3,500 MW of solar penetration on the DEC system, rather than the current levels of solar penetration of 840 MW. *Id.* According to witness Horii, 3,500 MW of solar penetration, "Tranche 4" in the analysis nomenclature, is the highest level of solar penetration evaluated and reflects solar penetration levels far in exceedance of current levels. *See* Tr. 525.14, II. 10-12. Witness Horii testified this was problematic because the timing of the need for capacity when there are 840 MW of solar on the DEC system is not the same as the timing of the need for capacity when there are 3,500 MW of solar on the system; installed solar generation shifts the need for system capacity increasingly *away* from hours when that solar is generating. Tr. p. 525.1411. 8-21. Witness Horii testified that avoided costs should be calculated based on current conditions. *See* Tr. p. 528.7, II. 19-20; *see also* Tr. p. 525.16. Specifically, Act 62 states "[e]ach electrical utility's avoided cost methodology fairly accounts for costs avoided by the electrical utility or incurred by the electrical utility ...." Witness Horii testified "Tranche 4" represents an amount of future solar that has not yet committed to a contract price for power and that if avoided cost rates are calculated correctly, they would reflect the cost conditions that exist at the time any contracts are signed. Tr. p. 528.8, II. 2-9. Witness Horii testified overpayment would only occur if one (1) group of solar QFs were paid based on a cost higher than actual avoided cost levels. *See* Tr. 528.8, II. 8-11.

According to witness Horii, with the higher level of solar generation, the need for system capacity shifts away from hours when the already installed solar is generating until, at some point, the amount and timing of the capacity credits may economically preclude solar from being added --- but that only means that the next tranche of solar is not cost effective. Tr. p. 525.15, II. 21-22. The prior tranches are still providing value via their reduction in their peak that helped shift the new peak to later hours. *See* Tr. 525.15, I. I top. 525.16, I. 2. Witness Horii testified that when looking at the avoided costs of new QFs in 2020 (the timeframe of the projects affected by the rates decided in these dockets), it is important to reflect cost changes relative to current conditions. Tr. p. 525.16, II. 5-7. Because these avoided capacity costs will be used to calculate compensation for solar in 2020, it is appropriate to use LOLEs that are based on current solar penetration levels. Tr. p. 525.16, II. 7-9. In his surrebuttal, Mr. Horii updated his recommendation to reflect that the "Existing plus Transition" scenario-which takes into account projects with signed interconnection agreements and PPAs-is the appropriate measure of "current conditions" on the basis that nearly 100% of projects with signed interconnection agreements and PPA's have resulted in completed in-service projects over the past three years. *See* Tr. p. 528.9, II. 3-7.

Witness Horii also testified that DEP incorrectly allocated the seasonal and time of day capacity allocation factors. *See* Tr. p. 525.17, I. 16 top. 525.18, I. 12. According to witness Horii, correcting the seasonal and time of day capacity allocation factors for DEP to reflect the "Existing plus Transition"" amount of solar penetration instead of the overly high "Tranche 4" results in a very small change in the capacity allocation factors. Tr. p. 525.18, II. 5-7. The summer peak allocation would change from DEP's proposed 0% to 1%, and the winter morning peak share

[11] In his Surrebuttal testimony, witness Horii testified that using the LOLE from the Tranche I case for DEP results **in the same seasonal allocations as he recommended in his direct testimony.**

would drop from 70% to 69%. Tr. p. 525.18, II. 8-9. The winter evening on-peak allocation would remain the same. *See* Tr. p. 525.17, I. 16 top. 525.18, I. 12.

Witness Snider testified Duke used the "Tranche 4" level of solar identified in the Astrape Solar Capacity Value study to determine the seasonal allocation factors used in this case. Tr. p. 630.58, II. 6-15. North Carolina Session Law 2017-192, House Bill 589 ("N.C. HB 589") established the Competitive Procurement of Renewable Energy ("CPRE") Program solicitation process, which calls for the addition of 2,660 MW of competitively procured renewable resources across the Duke Energy Balancing Authority Areas over a 45-month period. Tr. p. 630.59, II. 6-10. The total CPRE target of 2,660 MW via competitive solicitations will vary based on the amount of "Transition" MW at the end of the 45-month period, which N.C. HB 589 expected to total 3,500 MW. Tr. p. 630.59, II. 10-12. If the aggregate capacity of the Transition MW exceeds 3,500 MW, the competitive procurement volume of 2,660 MW will be reduced by the excess amount. Tr. p. 630.59, II. 13-14. N.C. HB 589 also allows for up to 600 MW of renewable energy procurement programs for large customers such as military installations and universities, as well as a community solar program. Tr. p. 630.59, II. 14-17. According to witness Snider, at the time the Solar Capacity Value study was conducted, the Companies' projection of total solar mandated by N.C. HB 589 and solar included in Act 236 corresponded to the "Tranche 4" level of solar in the study, which reflected 3,500 MW of cumulative solar for DEC and 3,585 MW for DEP. Tr. p. 630.59, II. 18-21. While the exact timing and amounts of transition and incremental solar additions may change over time, the Companies assert that it is reasonable to assume the cumulative mandated levels of solar under Tranche 4 for purposes of calculating the Standard Offer avoided cost rates. Tr. p. 630.59, II. 21-23, p. 630.60, II. 1-2. According to witness Snider, on July 10, 2018, Duke issued a request for bids for the first Tranche of CPRE, requesting 600 MW in DEC and 80 MW in DEP.

Tr. p. 630.60, 11. 4-5. Of the total number of projects selected by the independent administrator, a total of 13 projects signed PPAs. Tr. p. 630.60, 11. 5-6. Ten of the projects will be located in North Carolina and three projects will be located in South Carolina. Tr. p. 630.60, 11. 6-8. As explained by Duke Witness George Brown, the Companies plan to issue a request for bids for the second Tranche of CPRE (680 MW) in October 2019 to be constructed by 2023. Tr. p. 630.60, 11. 8-10; *see also* Tr. p. 621.17, l. 19 top. 621.18, 1. 1.

Commission Finding

We agree with ORS witness Horii that avoided costs should be calculated based on current conditions. Witness Horii testified 'Tranche 4" represents an amount of future solar that has not yet committed to a contract price for power and that if avoided cost rates are calculated correctly, they would reflect the cost conditions that exist at the time any contracts are signed. The "Existing plus Transition" scenario appropriately accounts for "current conditions." *See* Tr. 528.9, 11. 1-12. In contrast, the projected solar generation that the Companies ask us to rely on has neither signed contracts nor fixed prices. *See* Tr. p. 528.9, l. 7-12.

Act 62 states "[e]ach electrical utility's avoided cost methodology fairly accounts for costs avoided by the electrical utility or incurred by the electrical utility ...." Mr. Horii's proposal to rely on "current conditions" for the purpose of estimating the seasonal capacity value of the next group of solar resources accomplishes this objective. Further, this Commission is prohibited from making a decision based on speculation or surmise. The Companies' recommendation would require us to venture down this path. This Commission cannot make a decision based on an assumption that unreasonably deflates the value of avoided cost. As a result, the Commission finds the preponderance of the evidence in the record supports a finding consistent with ORS witness Horii's position on this issue and his position is just and reasonable.

B. Solar Integration Service Charge

ORS's Position

Witness Horii testified integrating renewable generation creates additional costs for utilities. Tr. p. 525.18, II. 14-15, p. 525.19, I. I. According to witness Horii, E3 conducted extensive work in California and Hawaii where renewable generation comprises a large portion of generation resources. Tr. p. 525.19, II. 1-2. In its modeling, E3 has seen that increasing amounts of solar and wind generation can require additional ramping capability and reserves to meet both the intermittent nature of solar and wind generation and the diurnal ramping characteristics of solar generation. Tr. p. 525.19, II. 2-5. The cost impact can include higher start-up costs, fuel costs, and O&M costs resulting from resources operating at levels below their maximum efficiency to allow upward headroom to ramp up output. Costs can also increase for additional generation plant required to provide additional flexible capacity. Tr. p. 525.19, II. 5-9.

Witness Horii testified he believed the Companies' analysis to be an acceptable approach to estimating the solar integration costs. Tr. p. 525.19, II. 10-12. However, witness Horii did have two observations about the Companies' analysis that he shared with the Commission: 1) the results of the Study may indicate higher solar integration costs than would be required if the Companies sought to minimize those integration costs; and 2) the Companies' proposal to use average integration costs that update annually. Tr. p. 525.19, II. 17-23.

According to witness Horii, integration costs could potentially be reduced in the following ways: 1) if additional operating reserve requirements were dynamically linked to solar output levels and the varying risk of solar output reductions; 2) employing improved solar output forecast methods to reduce the forecast error between expected and actual solar output; and 3) employing

pre-curtailment of solar to reduce the cost to address solar over forecast error. Tr. p. 525.20, II. 1-9.

Regarding the Companies' proposal to use average integration services charge instead of actual integration services charge, witness Horii testified that this practice would dampen this price signal and socialize the higher cost over both new and existing solar resources. Tr. p. 525.22, II. 8-18. According to witness Horii, this would encourage the over installation of solar beyond 2020 because the new solar entering the market would be subsidized by existing solar and would not be subject to the full cost of integrating onto the Companies' electric systems. Tr. p. 525.22, IL 18-21.

Witness Horii recommended the Companies' solar integration services charges of $1.10/MWh for DEC and $2.39/MWh for DEP be approved, but these charges be adopted as upper limits for solar integration service charges for contracts signed under the Standard Offers proposed by the Companies. Tr. p. 525.23, IL 7-15. Additionally, witness Horii recommended the Companies should conduct additional integration studies, and if lower incremental integration services charges were to be adopted for future offers, the integration services charges for this vintage of Standard Offer contracts be updated to reflect those lower values starting with the effective date of the new offers. Tr. p. 525.23, II. 15-19. According to witness Horii, the Companies should be required to update their analysis for future changes to their Standard Offers after conducting technical workshops where it receives input from the solar community and other stakeholders. Tr. p. 525.24, II. 3-9. Witness Horii recommended areas of agreement and disagreement be documented in a formal stakeholder process report to be submitted to the Commission along with the integration study. Tr. p. 525.24, II. 9-11.

DEC's and DEP's Position

According to witness Snider, Act 62 requires Duke to account for costs avoided or incurred by the utility, including ancillary service costs provided by or consumed by small power producers such as solar QFs. Tr. p. 55, II. 10-14. It explains how the companies require additional ancillary services due to the integration of intermittent solar QF power, and as such, have proposed a solar integration service charge to appropriately assign cost to solar generators. Tr. p. 55, II. 14-19. Witness Snider also introduces the Astrape study relied upon to calculate the level of additional ancillary requirements and the cost of these additional ancillaries. Tr. p. 55, II. 20-23. According to witness Snider, if the cost of additional ancillary requirements are not ascribed to the QF, then customers would unfairly be obligated to pay these increased costs through the fuel clause. Tr. p. 56, II. 5-9. Additionally, witness Snider testified that the companies will directly pass through savings from QFs paying the integration charge to customers in future fuel proceedings. Tr. p. 56, II. 9-12.

Regarding the Agreement, witness Snider testified the Companies support the terms of the stipulation, and he believes the stipulation represents a fair, reasonable, and full resolution of all the issues in this proceeding regarding the integration services charge. Tr. p. 56, II. 19-23. Witness Snider also testified that his testimony should not be construed as advocating any position that is contrary to the terms of the stipulation. Tr. p. 56, II. 23-25, p. 57, I. I.

According to witness Wintermantel, who works with Astrape consulting, Astrape was retained by Duke in late 2017 to analyze and quantify the ancillary service impact of integrating existing and future solar generation for the companies. Tr. p. 300, II. 17-20. This study was concluded in the fall of 2018 and is being relied upon by Duke witness Glen Snider to support the integration services charge presented in the companies' avoided cost filing. Tr. p. 300, II. 21-24.

The main premise of the ancillary service study is to assess the integration cost impact of adding different penetrations of solar generation while ensuring that system reliability is the same before and after the additional solar is added. Tr. p. 33, 11. 24-25, p. 301, 11. 1-4. The study determines the amount of load following reserves that are required to maintain the same level of reliability when adding various amounts of solar penetration and then also calculates the cost of these additional reserves to develop the integration charge. Tr. p. 301, 11. 4-10.

According to witness Winteremantel's testimony, Duke supports the terms of the Agreement. Tr. p. 299, l. 7. He believes the Agreement represents a fair, reasonable, and full resolution of all issues in this proceeding regarding the integration services charge. Tr. p. 299, 11. 8-11. Witness Wintermantel also testified that his testimony should not be construed as advocating for any position that is contrary to the terms of the Agreement. Tr. p. 299, 11. 11-13. According to witness Wintermantel, the Agreement adopts the results of the Astrape study for the existing plus transition solar penetration level for DEC and DEP. Tr. p. 299, 11. 17-19. At the existing plus transition solar penetration level for DEC, the study showed that an additional 26 megawatts of load following reserves were required to integrate 840 megawatts of solar. Tr. p. 299, 11. 20-24. The cost of these 26 megawatts of load following reserves translates into an ancillary service cost impact of $1.10 per megawatt-hour. Tr. p. 299, 11. 24-25, p. 300, 1-2. For DEP, the study identified that 166 megawatts of additional load following reserves were required in order to integrate 2,950 megawatts of solar generation. Tr. p. 300, 11. 3-6. For DEP, this resulted in an ancillary service cost impact of $2.39 per megawatt-hour. Tr. p. 300, 11. 6-8.

Company witness Wheeler testified that Duke supports the terms of the stipulation, and that he believes the stipulation represents a fair, reasonable, and full resolution of all issues in this proceeding regarding the integration services charge. Tr. p. 258, 11. 14-18. Additionally, witness

Wheeler testified that his testimony should not be construed as advocating any position that is contrary to the terms of the stipulation. Tr. p. 258, II. 18-21.

SACE/CCL's Position

Brendan Kirby, a Licensed Professional Engineer with a BS in electrical engineering from Lehigh University and an MS in electrical engineering, power option, from Carnegie-Mellon University, testified on behalf of CCL and SACE. Tr. p. 457, II. 3-7. Witness Kirby commented on Duke Energy's proposed SISC and the ancillary services study, prepared by Astrape Consulting in support of the SISC. Tr. p. 458, IL 7-11. Specifically, his testimony critiqued aspects of the ancillary service-study methodology and discussed how certain assumptions and mythological choices in the study led to the cost of solar integration being overstated. Tr. p. 458, II. 11-15.

Witness Kirby also testified that SACE and CCL support the terms of the settlement stipulation and believe it represents a fair and reasonable and full resolution of all issues in this proceeding regarding the SISC. Tr. p. 458, IL 18-21. Furthermore, witness Kirby testified that his testimony should not be construed as advocating for a position that is contrary to the terms of the stipulation at this time. Tr. p. 458, IL 21-24.

Finally, witness Kirby testified that he supported an independent technical review of the integration charge methodology as set forth in the stipulation. Tr. p. 458, I. 25, p. 459, II. 1-2.

SBA's Position

Ed Burgess, Senior Director at Strategen Consulting, testified on behalf of SBA. Tr. p. 373, I. 16. In witness Burgess' direct testimony he testified to a number of concerns he had with the Companies' SISC including: 1) his belief that it is premature to impose the SISC on solar QFs until the true costs of integration can be more accurately quantified through an independent analysis as contemplated by Act 62; his contention that the analytical model used by Duke

contained fundamental flaws; the lack of evidence in South Carolina that the integration costs projected by Duke will materialize soon; his contention that the Companies' proposal was one-sided and incomplete; and his concern that the form of the SISC model was linked to a hypothetical model, rather than real-world costs. Tr. p. 382.70, IL 10-18, p. 382.71, IL 1-9.

However, subsequent to the filing of the Agreement, witness Burgess testified that the SBA supports the terms of the Agreement, and he believes the Agreement represents a fair and reasonable resolution of all issues in this proceeding regarding the SISC. Tr. p. 378, II. 7-11. Additionally, he testified that his testimony should not be construed as advocating for any position that is contrary to the terms of the stipulation. Tr. p. 378, II. 12-14.

Partial Settlement Agreement

On October 21, 2019, an Agreement that purports to resolve issues related to the Companies' SISC was filed with the Commission. The signatories to the Agreement were: the Companies, SBA, SACE/CCL, and JDA.[12] According to the Agreement, the

> ... solar integration services charges (SISC) of $1.10/MWh (DEC) and $2.39/MWh (DEP) are reasonable, for purposes of this proceeding, for solar small power producers that enter into a PPA or establish a Legally Enforceable Obligation prior to the effective date of avoided cost calculations and methodologies filed in the next DEC/DEP avoided cost proceeding conducted by the SC Public Service Commission.

Additionally,

> The Astrape Study used to calculate the SISC presents novel and complex issues that warrant further consideration. Duke shall submit the study methodology and inputs to an independent technical review and include the results of that review and any revisions in its initial filing in the next avoided cost proceeding. To the maximum extent practicable the independent review of the study methodology shall take into consideration the South Carolina Integration Study called for by S.C. Code Ann. § 58-37-60. This process shall be subject to Commission oversight and comment from interested stakeholders.

No party objected to the introduction of the Agreement.

[12] **ORS did not sign on to the Agreement; however, it expressly did not oppose the Agreement, either.**

Commission's Finding

This Commission finds that the Agreement is just and reasonable and adopts the Agreement.

C. FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. We find the preponderance of the evidence in the record supports the use of a 20-year economic life for calculating avoided capacity costs as most appropriate and just and reasonable . The preponderance of the evidence in the records supports, and we find it to be just and reasonable, that avoided costs should be calculated based on current conditions and that the "Existing plus Transition" scenario appropriately accounts for current conditions.
2. This Commission finds the Agreement resolving disputes regarding the SISC is just and reasonable and adopts the Agreement.

D . ORDER

IT IS THEREFORE ORDERED based on the above stated findings and conclusions,

1) The Agreement is adopted and incorporated into this Order and attached hereto as Attachment A;
2) ORS's avoided capacity rates for the Standard Offer, as detailed in the above findings, and indicated in the tables below are Ordered and approved as reflecting a fair and unbiased valuation consistent with industry standard assumption s;

Avoided Capacit y Rates (Distribution) for DEP

	Summer On-Peak	Winter AM On-Peak	Winter PM On-Peak
Variable Rate Calculation			
(20 Years) (¢/kWh)	**0.29**	**13.69**	**5.95**
5-Year Fixed Rate Calculation			
(20 Years) (¢/kWh)	**0.30**	**13.95**	**6.07**

10-Year Fixed Rate Calculation			
(20 Years) (¢/kWh)	**0.30**	**14.37**	**6.25**

I 0-Year Fixed Avoided Capacity Rates (Distribution) for DEC

	Summer On-Peak	Winter AM On-Peak	Winter PM On-Peak
(20 Years) (¢/kWh)	**3.30**	**3.94**	**1.31**

The season and on-peak period definitions remain unchanged from DEC' s proposal.

In accordance with the above stated Findings and Conclusions and based on the preponderance of the evidence, we find as a matter of law that our rulings in this matter are in accordance with the stated intent of Act 62 and result in a just and reasonable result for the Companies' ratepayers while promoting South Carolina' s policy of encouraging renewable energy.

BY ORDER OF THE COMMISION:

Comer H. Randall, Chairman

Justin T. Williams, Vice-Chairman

(SEAL)